REMARKS

Claims 1-12 are pending in the subject application. Of those claims, claims 1, 6 and 12 are independent.

In the outstanding final Office Action, claims 1, 2, 5, 6 and 7 are rejected under 35 USC Section 102(e) as being anticipated by Mutoh (US 2004/0057634).

Dependent claim 2 is rejected under 35 USC Section 103(a) as being unpatentable over Mutoh in view of Yamaguchi (US Patent 6,424,753). Dependent claim 4 is rejected under 35 USC Section 103(a) as being unpatentable over Mutoh in view of Kamon (US Patent 4,827,433). Dependent claim 8 is rejected under 35 USC Section 103(a) as being unpatentable over Mutoh in view of Kim (US 2002/0060676). Dependent claim 9 is rejected under 35 USC Section 103(a) as being unpatentable over Mutoh in view of DiNicola et al. (US Patent 6,394,524). Claim 10 is rejected under 35 USC Section 103(a) as being unpatentable over Mutoh in view of Najand (US Patent 7,203,379). Lastly, claim 11 is rejected under 35 USC Section 103(a) as being unpatentable over Mutoh in view of Yang et al. (US 2002/0025084).

The foregoing rejections are respectfully disagreed with, and are traversed below.

Independent claim 1 recites:

1. A method comprising, with use of a processor:

determining an original digital matrix image to be scaled,

selecting a scaling ratio R by setting integers X, Y, and Z, wherein the scaling ratio R corresponds approximately to an equation Y/(Z*X) and wherein Y < Z,

coarse scaling the original matrix by using a ratio 1/X to create pixels of an intermediate matrix, and

fine scaling the intermediate matrix by using a ratio Y/Z to create a final matrix image.

Independent claim 6 recites:

6. An apparatus comprising:
memory areas configured to store an original digital matrix image to be scaled, for data to be processed, and configured to store an output image matrix, a central unit (CPU) configured to process the original matrix image in two stages by a selected scaling ratio R, in the first stage the original matrix is coarse scaled by using a ratio 1/X to create pixels of the intermediate matrix, and in the second stage each pixel of the intermediate matrix is fine scaled by using a ratio Y/Z, and wherein an equation Y/(Z*X) corresponds approximately to a scaling ratio R and wherein Y < Z.

Independent claim 12 recites:

12. A computer-readable memory having software stored thereon and the software when executed by a central unit (CPU) performs:
determining an original digital matrix image to be scaled,

selecting a scaling ratio R by setting integers X, Y, and Z, wherein the scaling ratio R corresponds approximately to an equation Y/(Z*X) and wherein Y < Z,

coarse scaling the original matrix by using a ratio 1/X to create a pixels of an intermediate matrix, and

fine scaling the intermediate matrix by using a ratio Y/Z to create a final image matrix.

In the Action, the Examiner maintains that all of Applicant's independent claims are anticipated by Mutoh. Applicant respectfully disagrees.

Mutoh discloses an image processing apparatus and method for changing the size of image data of an original image by scaling. It is possible to perform the scaling in two stages. Mutoh particularly discloses a switch (step s71 of Fig. 17) deciding whether to perform scaling in one or two stages. The scaling is performed in one stage, if a given target size-change rate is an integer and in two stages, if the given target size-change rate includes a fraction. The problem that Mutoh tries to solve is to reduce total processing time of the image. Due to the nature of the problem to be solved, Mutoh uses a fine scaler first (a high-order processing way) and a coarse scaler second (see paragraph [153] of Mutoh).

In contrast to Mutoh, according to embodiments of Applicant's invention, scaling is performed always in two stages, even when the first scaler is 1/1. In addition, a problem to be solved by embodiments of Applicant's invention is to minimize a required amount of memory despite high-quality downscaling. This problem is addressed by Applicant by, for example, using a coarse scaler first and a fine scaler second, according to embodiments, and as in Applicant's independent claims.

Accordingly, differences between Mutoh and Applicant's claimed invention as recited in independent claims 1, 6 and 12 relate, for example, to scaling. That is, Mutoh uses two scaling stages only when the total scaling ration in not an integer, whereas according to Applicant's independent claims, scaling is always done in two stages. In addition, Mutoh and Applicant's independent claims use scalers in a different order, and the problems to be solved are different. For example, Applicant's embodiments set forth in the independent claims employ scalers in the recited order to, for example, ensure a minimized required amount of memory, as well as a better image quality.

Thus, Applicant respectfully emphasizes and maintains that the disclosure of Mutoh teaches the use of a fine scaler first (a high-order processing way) and a coarse scaler second, which is contrary to embodiments of

Applicant's claimed invention where a coarse scaler is used first and a fine scaler second.

However, the Examiner disagrees with Applicant about the order of scalers in Mutoh stating at page 2 of the outstanding Action: "[i]*n example in paragraph 153 of Mutoh, it is magnification example of rate 8.4 and first way of scaler would be 8 and second scaler would be 8.4/8 which is same as 84/80. if it is size reduction rate of 8.4 then first way of scaler would be 8 and second scaler would be 8.4/8 which is same as 84/80*" (sic).

However, Applicant respectfully asserts that Muthoh further discloses at paragraph [152], with respect to the second way (second scaler): "*[t]hen, after that, for the remaining fraction size-change portion (ZZ/Z1, i.e., (8.4)/8=1.05, in the above-mentioned example), the second processing way which is a simple size-change processing is applied (Steps S74 and S75)*" (Emphasis added).

Thus, this clearly means that the second scaler is just a simple size-changer. Mutoh continues in paragraph [153] to disclose: "*[t]hus, according to the present invention, the simple second processing way is applied for the fraction portion which otherwise would require a considerable processing time. Thereby, it becomes possible to effectively reduce the total required time. Further, the first processing way which includes a high-order processing such as a jaggy processing should be applied only for the size-change processing for the integer size-change portion"* (Emphasis added).

In contrast, according to embodiments of Applicant's claimed invention, the first scalar is an averager and the second scalar is the one which can perform an exact and detailed spared size change.

It is further respectfully noted that use of this coarse scaler first and the fine scaler second according to embodiments of Applicant's claimed invention solves a problem as to how to scale photos by using the least

amount of memory as possible. This problem exists due to, for example, the limited memory resources of cameras or other device with a limited amount of memory.

Mutoh does not address the foregoing problem because, for example, the solution of Mutoh is used for copying machines or printers having a considerable bigger amount of memory than cameras. The problem addressed by Mutoh is how to achieve a faster photo processing solution, because copyists or users of printers do not want to wait too long to obtain their scaled copies or prints out of machines. This huge difference between the problems, uses and resources is a reason for the different kind of solutions of embodiments of Applicant's claimed invention and that of Muthoh.

Accordingly, for at least the foregoing reasons, it is respectfully asserted that Muthoh does not disclose or suggest the subject matter recited in Applicant's independent claims, particularly regarding the coarse and fine scaling recited in each of these independent claims, including the order of the scaling also recited therein.

Accordingly, for at least the foregoing reasons, Applicant's independent claims 1, 6 and 12 are patentable in view of Mutoh. Similarly, all dependent claims also are patentable at least in view of their dependency from an allowable independent claim. For completion, it is noted that that addition of the secondary references cited in the Action in the rejection of Applicant's dependent claims do not cure the shortcoming of Mutoh and do not disclose or suggest Applicant's claims. Nor is there any reason to modify and/or combine any of the cited references in an attempt to arrive at Applicant's claims.

All issues having been addressed, the subject application is believed to be in condition for immediate allowance. No new issues requiring further search andor consideration are raised by this Response. Accordingly, the Examiner is

respectfully requested to enter this Response, and reconsider and withdraw the outstanding rejections. A Notice of Allowance is therefore earnestly solicited.

Should the Examiner have any questions, a call to the undersigned would be appreciated.

Respectfully submitted:

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